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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,606	11/21/2003	PohSoon Chong	STL11454	3124
7590 Seagate Technology LLC 1280 Disc Drive Shakopee, MN 55379			EXAMINER GUYTON, PHILIP A	
			ART UNIT	PAPER NUMBER
			2113	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/07/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/719,606	<b>Applicant(s)</b> CHONG ET AL.	
	<b>Examiner</b> Philip Guyton	<b>Art Unit</b> 2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 21-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-15 and 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent App. No. 2001/0055172 to Yip et al. (hereinafter Yip).

With respect to claim 1, Yip discloses a method of managing spatially related defects on a data storage media surface in a data storage device (paragraph 8 – “*The present invention...scratches on the disk*”) comprising:

identifying defect locations on the media surface (paragraph 19 – “*To pack more data...in a buffer memory*”);

determining whether the location of an identified defect is within a predetermined window of another identified defect location on the media surface (paragraph 22 – “*To do this, the defect entries...grouped into one cluster*”);

if the location is within the predetermined window, characterizing the defects in the window as a scratch (figure 2 and paragraph 22 – adjacent defects grouped together as cluster); and

Art Unit: 2113

generating a scratch tracking table having a start index and an end index for each scratch (Table 2 and paragraph 24 – *“The pattern is represented...in Table 2 below”*).

With respect to claim 2, Yip discloses padding the scratch (paragraph 34 – *“An alternative embodiment...shown in Table 8”*).

With respect to claim 3, Yip discloses wherein the characterizing operation comprises:

assigning a unique scratch index to the scratch (Table 2 – parameters are unique to this scratch); and

associating each defect within the window with the unique scratch index (Table 1 becomes Table 2 – each defect in Table 1 associated with scratch index represented by Table 2).

With respect to claim 4, Yip discloses generating a scratch index table associating each identified defect with a scratch index (paragraph 25 – *“The set of...the first defect table”*).

With respect to claim 5, Yip discloses wherein the determining operation comprises:

loading an identified defect location in a register (paragraph 23 – *“For each cluster...the largest address”*); and

comparing the defect location and a last identified defect location of each identified scratch against predetermined window criteria (paragraphs 32-33 – *“FIG. 5 shows...shown in Table 7”*).

Art Unit: 2113

With respect to claim 7, Yip discloses a method comprising:

identifying defect locations on a data storage media (paragraph 19 – *“To pack more data...in a buffer memory”*);

tabulating the identified defects in a defect list (Table 1);

determining whether one or more defect locations lies within a predetermined window of another defect location (paragraph 22 – *“To do this, the defect entries...grouped into one cluster”*);

assigning a unique scratch index to each defect location within the predetermined window (Table 2 – parameters are unique to this scratch);

generating a scratch tracking table listing a start index for a first defect location in the window and an end index for a last defect location in the window for each scratch index assigned (Table 2 and paragraph 24 – *“The pattern is represented...in Table 2 below”*); and

generating a scratch index table associating a scratch index with each defect location (Table 2 and paragraph 25 – *“The set of...the first defect table”*).

With respect to claim 6, Yip discloses wherein the predetermined window criteria comprises a number of cylinders and a number of bytes (Table 2 – parameters include cylinder and sector, wherein the scratch, angle and span parameters represent number of bytes).

With respect to claim 8, Yip discloses using the scratch tracking table and the scratch index table to determine whether a read or write command is to be redirected to another data storage media location (paragraph 3 – *“Upon power-on of the...disc drive*

Art Unit: 2113

operations" and paragraph 8 – *"This second defect table will be stored in the buffer and used by the firmware to skip over defects during operation"*).

With respect to claim 9, Yip discloses:

retrieving an entry in the scratch tracking-table having a first scratch index ();  
searching the scratch index table for defect locations associated with the first scratch index;

padding the scratch; and

repeating the retrieving, searching and padding operations for a next scratch index (paragraph 34 – *"An alternative...shown in Table 8" and Table 7 and Table 8*).

With respect to claim 10, it is deemed inherent to the invention of Yip wherein the repeating operation includes a query operation asking whether an end of the scratch tracking table has been reached prior to retrieving the next scratch index, as it would not continue the retrieving, searching, and padding if there were no other scratches to be padded.

With respect to claim 11, Yip discloses a system for managing scratches on a data storage media in a data storage device (paragraph 8 – *"The present invention...scratches on the disk"*) comprising:

a controller adapted to control access by a host to and from the data storage media (figure 1, items 24,22,20,26,28,30 and paragraph 18 – *"To read or write data...with the head 24"*);

a memory coupled to the controller (figure 1, item 12 and paragraph 18 – *"To read or write data...with the head 24"*);

a scratch index table in the memory having a unique index entry for each identified defect location on the data storage media and an associated scratch index entry for each defect location (Table 2 and paragraph 24 – *“The pattern is represented...in Table 2 below”* – parameters are unique to this scratch); and

a scratch tracking table in the memory having, for each scratch index entry, a start index, and end index, and an end defect location for each identified scratch index (Table 2 and paragraph 24 – *“The pattern is represented...in Table 2 below”*).

With respect to claim 12, Yip discloses a buffer in the controller wherein the scratch tracking table and scratch index table are utilized in the buffer to identify defect locations (paragraph 8 – *“This second defect table will be stored in the buffer”* and paragraph 19 – *“The defect table may be stored on the disc, or when the disc drive is in operation, in a buffer memory”*).

With respect to claim 13, Yip wherein the controller:

identifies defect locations on the media surface (paragraph 19 – *“To pack more data...in a buffer memory”*),

determines whether the location of an identified defect is within a predetermined window of another identified defect location on the media surface (paragraph 22 – *“To do this, the defect entries...grouped into one cluster”*),

characterizes the defects in the window as a scratch, if the location is within the predetermined window (paragraph 22 – adjacent defects grouped together as cluster),  
and

generates a scratch tracking table having a start index and an end index for each scratch (Table 2 and paragraph 24 – *“The pattern is represented...in Table 2 below”*).

With respect to claim 14, Yip discloses wherein the controller pads each scratch in the scratch tracking table (paragraph 34 – *“An alternative embodiment...shown in Table 8”*).

With respect to claim 15, Yip discloses wherein the controller characterizes the defects by:

assigning a unique scratch index to the scratch (Table 2 – parameters are unique to this scratch), and

associating each defect within the window with the unique scratch index (Table 1 becomes Table 2 – each defect in Table 1 associated with scratch index represented by Table 2).

With respect to claim 21, Yip discloses a method, comprising characterizing defects in a medium as belonging to one or more scratches in the medium using a scratch index table (Table 2 and paragraph 25).

With respect to claim 22, Yip discloses wherein the scratch index table associates each of the defects with one or more scratches in the medium (Table 2).

With respect to claim 23, Yip discloses wherein a scratch includes one or more defects within a predetermined window of another identified defect (paragraph 22).

With respect to claim 24, Yip discloses wherein the medium is a disc drive (figure 1).



With respect to claim 25, Yip discloses wherein the predetermined window criteria comprises a number of cylinders and a number of bytes (figure 2 and paragraph 21).

### ***Response to Arguments***

3. Applicant's arguments filed 18 December 2007 have been fully considered but they are not persuasive.

Regarding claims 1, applicant argues Yip does not disclose "determining whether the location of an identified defect is within a predetermined window of another identified defect location on the media surface." More specifically, applicant states that in Yip, "tracks are grouped into zones based on the rates at which data is written." However, this is an erroneous interpretation of Yip. Yip teaches grouping tracks into zones based on "the known technique of zone-bit recording" (paragraph 22 – *"To further maximize...zone-bit recording"*). Zone-bit recording entails dividing a recording disk into zones, each disposed about the center of rotation of the disk at a different radius (see U.S. Patent No. 5,369,376 – column 2, lines 48-66). Because each zone lies at a different radius, data is written and read at different rates for the various zones. Thus, zones are selected based on location within the disk, and not speed at which data is written, as alleged by applicant. Zones, as disclosed by Yip, are therefore equivalent to windows, as recited in the claims. In Yip, all defective sectors in a zone are grouped into one or more clusters, or scratches (paragraph 22 – *"All the defective...one or more clusters"*). In other words, Yip teaches "determining whether the location of an identified

Art Unit: 2113

defect is within a predetermined window of another identified defect location on the media surface; and if the location is within the predetermined window, characterizing the defects in the window as a scratch,” as recited in claim 1.

As to claim 7, applicant additionally asserts Yip does not disclose “assigning a unique scratch index to each defect location within the predetermined window.” More specifically, applicant argues that while “Table 2 of Yip et al. does illustrate parameters unique to specific scratch, it eliminates reference to each defect location within a predetermined window.” The examiner respectfully disagrees. Since Table 2 of Yip is a compressed representation of Table 1, it is clear that Table 2 represents each of the defects that make up the defined scratch. Since the parameters of the scratch are unique, this is equivalent to a unique scratch index. Thus, Yip effectively teaches “assigning a unique scratch index to each defect location within the predetermined window,” as recited in the claim. Applicant further argues that Yip does not teach “generating a scratch index table associating a scratch index with each defect location.” However, as previously discussed, each scratch stored in the second defect table, such as Table 2, associates the scratch index, or parameters, with each defect in the scratch.

With regard to claim 11, applicant submits that Yip does not disclose “a scratch index table in the memory having a unique index entry for each identified defect location on the data storage media and an associated scratch index entry for each defect location.” However, Yip teaches a second defect table, which details patterns that define scratches (Table 2 and paragraph 25). Each of these patterns are stored based on their parameters, which represent each of the defects that are members of the

scratch (paragraph 24). Therefore, Yip teaches a scratch index table in the memory having a unique index entry for each identified defect location on the data storage media and an associated scratch index entry for each defect location," as recited in claim 11.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Guyton whose telephone number is (571) 272-3807. The examiner can normally be reached on M-F 8:00-4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone

Art Unit: 2113

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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